

REMARKS

In response to the Official Action of July 21, 2003, applicant has amended the subject claims. Specifically, applicant notes the rejection of claims 1-5 and 7-16 under 35 USC Section 102(b) as being anticipated by Locati et al. (U.S. Patent No. 3,561,391). It is the position of the Examiner that Locati et al. discloses the same marine vessel cleaning assembly and method as claimed as shown in Figs. 1-7 that is comprised of a cleaning means defined as either part 16 or 24 and displacement means defined as either part 18 or 26 that is supported on a framework defined as parts 12 and 14. The Examiner continues that this entire assembly of the prior art is adapted for location under water as shown in Figs. 2 and 5 of the reference where the displacement means is operative to urge the cleaning means generally upwardly and downwardly of a hull as shown in Figs. 2 and 5 while the cleaning means is in contact with the hull. The Examiner continues that the reference shows pivot means in Figs. 2 and 5 which are provided on a pair of arms to which cleaning means in the form of brushes are rotatably mounted. The pivot means are taught by the reference to pivot the cleaning means about a horizontal axis generally upwardly and downwardly of the hull. The Examiner further points to a "sensing means" in the form of a spring, defined as either part 21 or 29 as provided on the arms to monitor a measure of resistance to the rotation of the cleaning means. The Examiner concludes that a lateral displacement means is also provided on the arms to allow generally lateral displacement of the cleaning means with respect to the hull as shown in Figs. 3 and 6 of the reference.

At the outset, applicant notes the addition of claims 20 and 21 which are similar in scope to original claim 1 noting that the phrase "marine vessel" has been broadened to

“apparatus” for the present invention could be used in non-marine environments, that is, fresh water environments such as inland lakes and rivers. There is nothing in the present disclosure which limits use of the present invention to marine (salt water) environments. Further, where originally filed claim 1 recited the use of cleaning means “arranged to contact fouling on the hull,” the specification does not limit the present cleaning means to physical contact. Instead, the cleaning means could be carried out through the use of forced water or compressed air thus obviating the need for direct physical contact.

New claims 17, 18 and 19 have also been introduced. Claims 18 and 19 are in the form of a device and method, respectively, that include the limitations originally presented claim 6 in which the assembly comprises control means which is operative to control the degree of generally upwardly and downwardly directed displacement of the brush means. There is absolutely no disclosure in the prior art of an operative control means and it is assumed that the Examiner is in agreement with this observation for claim 6 was not made part of the rejection over prior art. Claim 6 was merely “objected to.” It is thus assumed that independent claim which 17 which recites sensing means and claims 18 and 19 which include the subject control means limitation would be found allowable. In addition, it is respectfully asserted that all of the claims are presented for examination are likewise allowable.

It is particularly important to note that elements 18 and 26 of Locati et al. are passive in that they do not act to urge the cleaning means upwardly and downwardly of the hull of a floating vessel. Rather, in Locati et al., the cleaning means are moved by the vessel and this movement is only permitted, i.e., not caused, by parts 18 or 26. Applicant notes the disclosure in the reference in column 1, lines 71-73 where it is stated that “when

the arms are pivoted, the brushes are forced into the water,” but this does not mean that the pivoting arms caused the movement of the brushes. Instead, movement of the brushes according to the disclosure of Locati et al., is accomplished by or permitted by the pivoting of the arms. This latter interpretation of lines 71-73 of column 1 is the only one possible because there is no apparatus disclosed by Locati et al., capable of causing the cleaning means to move up and down relative to the vessel hull. It is noted in this regard that buoyancy of the brushes (column 1, line 73) or spring means (column 1, line 75) can only move the cleaning means in one direction, namely, upwards. By contrast, as shown in Fig. 2 of the application drawings, there is a displacement means comprised of hydraulic ram 17a coupled via a tie rod 17b and a linkage 22 et al. to arms 3. This displacement means is operative as clearly described on pages 6 and 7 of the specification for urging the cleaning means upwardly and downwardly to clean the boat hull. The present claims offered for examination make this distinction and thus clearly distinguish themselves from Locati et al. as either an anticipating or obviousness rendering piece of prior art.

For the reasons advanced above, it is respectfully asserted that the present application is in condition for allowance and such disposition is earnestly solicited.

Respectfully submitted,
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Dated: 10/29/03

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CLEANING ASSEMBLY

The present invention relates to cleaning assemblies and in particular to marine vessel cleaning assemblies.

It is common practice for both power and sailing craft to be cleaned at least twice a year, and where performance and fuel economy are required, these can be increased significantly. However, anti-fouling paints are becoming increasingly expensive and because of world-wide anti-pollution laws the paints available to both the commercial and leisure industries are becoming less effective.

- 10 According to a first aspect of the invention there is provided a marine vessel cleaning assembly comprising cleaning means and displacement means supported on a framework adapted for location under the water, the arrangement being such that, in use, the displacement means is operative to urge the cleaning means generally upwardly and downwardly of a hull of a floating marine vessel whilst said cleaning means is in contact with fouling on the hull.

Preferably the displacement means comprises pivot means which is operative to pivot the cleaning means, about a substantially horizontal axis, generally upwardly and downwardly of the hull.

- 20 Preferably the cleaning means comprises rotatably mounted brush means which, in use, is caused to rotate.

The assembly desirably comprises sensing means which is operative to monitor a measure of the resistance to the rotation of the brush means.

CLAIMS

1. A marine vessel cleaning assembly (1) comprising cleaning means (5, 6) and displacement means (17a, 17b) supported on a framework (18) adapted for location under the water, the arrangement being such that, in use, the displacement means is operative to urge the cleaning means (5, 6) generally upwardly and downwardly of a hull of a floating marine vessel whilst said cleaning means is in contact with fouling on the hull.
2. A marine vessel cleaning assembly (1) as claimed in claim 1 in which the assembly comprises pivot means (17a, 17b, 15, 22) which is operative to pivot the cleaning means (5, 6), about a substantially horizontal axis (A-A), generally upwardly and downwardly of the hull.
3. A marine vessel cleaning assembly (1) as claimed in claim 2 in which the pivot means (17a, 17b, 15, 22) is operative to pivot the cleaning means (5, 6) about an axis (A-A) which is submerged.
4. A marine vessel cleaning assembly (1) as claimed in claim 1 claim 2 or claim 3 in which the cleaning means (5, 6) comprises rotatably mounted brush means (5, 6) which, in use, is caused to rotate.
5. A marine vessel cleaning assembly (1) as claimed in claim 4 in which the assembly comprises sensing means which is operative to monitor a measure of the resistance to the rotation of the brush means (5, 6).
6. A marine vessel cleaning assembly (1) as claimed in claim 4 or claim 5 in which the assembly comprises control means which is operative to control the degree of generally upwardly and downwardly directed displacement of the brush means (5, 6).